

WHAT IS CLAIMED IS:

1. A method for identifying at least one cause of a color uniformity problem in an image-forming device having at least a first print station and a second print station downstream of the first print station, where each print station includes a charging substation, an exposing substation and a developing substation, the method comprising:

selecting at least a first substation from the charging substation and exposing substation of the first print station;

selecting at least a second substation from one of the exposing substation and developing substation of the second print station;

adjusting a setting on the first substation, based on an interval between the first substation and the second substation;

disabling at least some non-selected substations of the image-forming device; and

generating a test image using the selected substations, wherein a cause of the color uniformity problem can be identified from the test image based on the selected substations used to form the test image.

2. The method according to claim 1, wherein the first substation is a charging substation and second substation is one of the exposing station and the developing substation.

3. The method according to claim 1, further comprising adjusting a charge setting on the first substation to compensate for a variable interval between the first substation and the second substation.

4. The method according to claim 3, further comprising determining an amount of adjustment to the charge settings by measuring a voltage on a charge-retentive surface of the image-forming device resulting from the first substation.

5. The method according to claim 4, wherein determining the amount of adjustment comprises:

determining an amount of adjustment an AC charge setting; and
determining an amount of adjustment to a DC charge setting.

6. The method according to claim 4, wherein determining the amount of adjustment comprises:

measuring a plurality of voltages corresponding to a plurality of charge settings; and

linearly interpolating between the plurality of charge settings to determine a desired charge setting to be applied to produce a target voltage.

7. The method according to claim 6, wherein measuring the plurality of electrostatic voltages corresponding to a plurality of charge settings comprises measuring the plurality of electrostatic voltages at settings between about 200 volts and about 1000 volts.

8. The method according to claim 7, wherein the plurality of voltages is measured at each of the developing substations downstream from the charging substation.

9. The method according to claim 8, wherein determining the amount of adjustment is based on which downstream developing substation is chosen as the second substation.

10. The method according to claim 7, wherein the plurality of voltages is measured at each of the exposing substations downstream from the charging substation.

11. The method according to claim 8, wherein determining the amount of adjustment is based on which downstream exposing substation is chosen as the second substation.

12. The method of claim 2, further comprising:
selecting a third substation from the first or second print stations, or from a third print station, wherein the third substation is an exposing substation.

13. The method of claim 1, further comprising:
disabling the substations that were not selected; and
generating test images indicative of a color uniformity problem caused by the first, second or third print station.

14. A method for identifying at least one cause of a color uniformity problem in an image-forming device, comprising:

choosing at least one test set, each test set identifying a charging substation from the first print station, an exposing substation from the first print station or a second print station, and a developing substation from the second print station or a third print station;

adjusting a charge setting on the identified charging substation, based on an interval between the identified charging substation and the identified developing substation; and

generating, for each test set, a plurality of test images that are indicative of a color uniformity problem caused by one of the selected substations.

15. The method of claim 14, further comprising choosing at least additional one test set to determine that the cause of a color uniformity problem as being one of the non-identified substations.

16. The method of claim 14, wherein adjusting the charge settings comprises measuring an electrostatic voltage on a charge-retentive surface resulting from the charging substation.

17. The method of claim 14, wherein adjusting the charge settings comprises at least one of adjusting an AC charge setting and adjusting a DC charge setting.

18. The method of claim 14, wherein adjusting the charge settings comprises:

measuring a plurality of electrostatic voltages corresponding to a plurality of charge settings; and

linearly interpolating a correct charge setting to be applied to produce a target electrostatic voltage.

19. The method of claim 18, wherein measuring the plurality of electrostatic voltages corresponding to a plurality of charge settings comprises measuring the plurality of electrostatic voltages at settings between about 200 volts and about 1000 volts.

20. The method of claim 18, wherein measuring the plurality of electrostatic voltages comprises measuring the plurality of electrostatic voltages at each of the developing substations downstream from the charging substation.

21. The method of claim 14, wherein adjusting the charge settings comprises adjusting the charge settings based on which print station the developing substation is chosen from.

22. A method for determining a charge setting device for a charging substation in an image-forming device to obtain a target charge on a

downstream substation that is located in a different print station than the print station that the charging substation is located in, comprising:

applying at the charging substation a charge to a charge-retentive surface of the image-forming device;

measuring at the downstream developing substation a voltage on the charge-retentive surface of the image-forming device resulting from a charge delivered at the charging substation;

incrementing the charge setting on the charge setting device;

repeating at least the applying and measuring steps for at least one incremented charge setting; and

determining, based on the measured voltages on the charge-retentive surface of the image-forming device resulting from the charges delivered at the charging substation for the plurality of charge settings, a charge setting that results in the target voltage at the developing substation.

23. The method according to claim 22, wherein determining the charge setting comprises:

determining a setting for an AC charging device; and

determining a setting for a DC charging device.

24. The method according to claim 22, wherein determining, based on the measured voltages on the charge-retentive surface of the image-forming device resulting from the charges delivered at the charging substation for the plurality of charge settings, the charge setting that results in the target voltage at the developing substation comprises linearly interpolating between the plurality of measured voltages to determine a desired charge setting to be applied to produce the target voltage.

25. A storage medium storing a set of program instructions executable on a data processing device and usable to identify at least one cause of a color uniformity problem in an image-forming device having at least a first print station and a second print station downstream of the first print station, where each print station includes a charging substation, an exposing substation and a developing substation, the set of program instructions comprising:

instructions for selecting at least a first substation from the charging substation and exposing substation of the first print station;

instructions for selecting at least a second substation from one of the exposing substation and developing substation of the second print station;

instructions for adjusting a setting on the first substation based on an interval between the first substation and the second substation;

instructions for disabling at least some non-selected substations of the image-forming device; and

instructions for generating a test image using the selected substations, wherein a cause of the color uniformity problem can be identified from the test image based on the selected substations used to form the test image.

26. The storage medium according to claim 25, wherein the first substation is a charging substation and second substation is one of the exposing station and the developing substation.

27. The storage medium according to claim 25, further comprising instructions for adjusting a charge setting on the first substation to compensate for a variable interval between the first substation and the second substation.

28. The storage medium according to claim 27, further comprising instructions for determining an amount of adjustment to the charge settings by measuring a voltage on a charge-retentive surface of the image-forming device resulting from the first substation.

29. The storage medium according to claim 28, wherein the instructions for determining the amount of adjustment comprise:

instructions for determining an amount of adjustment an AC charge setting; and

instructions for determining an amount of adjustment to a DC charge setting.

30. The storage medium according to claim 28, wherein the instructions for determining the amount of adjustment comprise:

instructions for measuring a plurality of voltages corresponding to a plurality of charge settings; and

instructions for linearly interpolating between the plurality of charge settings to determine a desired charge setting to be applied to produce a target voltage.

31. The storage medium according to claim 30, wherein the instructions for measuring the plurality of electrostatic voltages corresponding to a plurality of

charge settings comprise instructions for measuring the plurality of electrostatic voltages at settings between about 200 volts and about 1000 volts.

32. The storage medium according to claim 31, wherein the plurality of voltages is measured at each of the developing substations downstream from the charging substation.

33. The storage medium according to claim 32, wherein the instructions for determining the amount of adjustment is based on which downstream developing substation is chosen as the second substation.

34. The storage medium according to claim 31, wherein the plurality of voltages is measured at each of the exposing substations downstream from the charging substation.

35. The storage medium according to claim 32, wherein the instructions for determining the amount of adjustment is based on which downstream exposing substation is chosen as the second substation.

36. The storage medium of claim 26, further comprising:
instructions for selecting a third substation from the first or second print stations, or from a third print station, wherein the third substation is an exposing substation.

37. The storage medium of claim 36, further comprising:
instructions for disabling the substations that were not selected; and
instructions for generating test images indicative of a color uniformity problem caused by the first, second or third print station.

38. A storage medium storing a set of program instructions executable on a data processing device and usable to identify at least one cause of a color uniformity problem in an image-forming device, the set of program instructions comprising:

instructions for choosing at least one test set, each test set identifying a charging substation from the first print station, an exposing substation from the first print station or a second print station, and a developing substation from the second print station or a third print station;

instructions for adjusting a charge setting on the identified charging substation, based on an interval between the identified charging substation and the identified developing substation; and

instructions for generating, for each test set, a plurality of test images that are indicative of a color uniformity problem caused by one of the selected substations.

39. The storage medium of claim 38, further comprising instructions for choosing at least one additional test set to determine that the cause of a color uniformity problem as being one of the non-identified substations.

40. The storage medium of claim 38, wherein the instructions for adjusting the charge settings comprise instructions for measuring an electrostatic voltage on a charge-retentive surface resulting from the charging substation.

41. The storage medium of claim 38, wherein the instructions for adjusting the charge settings comprise at least one of instructions for adjusting an AC charge setting and instructions for adjusting a DC charge setting.

42. The storage medium of claim 38, wherein the instructions for adjusting the charge settings comprise:

instructions for measuring a plurality of electrostatic voltages corresponding to a plurality of charge settings; and

instructions for linearly interpolating a correct charge setting to be applied to produce a target electrostatic voltage.

43. The storage medium of claim 42, wherein the instructions for measuring the plurality of electrostatic voltages corresponding to a plurality of charge settings comprise instructions for measuring the plurality of electrostatic voltages at settings between about 200 volts and about 1000 volts.

44. The storage medium of claim 42, wherein the instructions for measuring the plurality of electrostatic voltages comprise instructions for measuring the plurality of electrostatic voltages at each of the developing substations downstream from the charging substation.

45. The storage medium of claim 38, wherein the instructions for adjusting the charge settings comprise instructions for adjusting the charge settings based on which print station the developing substation is chosen from.

46. A storage medium storing a set of program instructions executable on a data processing device and usable to determine a charge setting for a charging substation in an image-forming device usable to obtain a target charge on a

downstream substation that is located in a different print station than the print station that the charging substation is located in, the set of program instructions comprising:

instructions for applying at the charging substation a charge to a charge-retentive surface of the image-forming device;

instructions for measuring at the downstream developing substation a voltage on the charge-retentive surface of the image-forming device resulting from a charge delivered at the charging substation;

instructions for incrementing the charge setting on the charge setting device;

instructions for repeating at least the applying and measuring steps for at least one incremented charge setting; and

instructions for determining, based on the measured voltages on the charge-retentive surface of the image-forming device resulting from the charges delivered at the charging substation for the plurality of charge settings, a charge setting that results in the target voltage at the developing substation.

47. The storage medium according to claim 46, wherein the instructions for determining the charge setting comprise:

instructions for determining a setting for an AC charging device; and
instructions for determining a setting for a DC charging device.

48. The storage medium according to claim 46, wherein the instructions for determining, based on the measured voltages on the charge-retentive surface of the image-forming device resulting from the charges delivered at the charging substation for the plurality of charge settings, the charge setting that results in the target voltage at the developing substation comprise instructions for linearly interpolating between the plurality of measured voltages to determine a desired charge setting to be applied to produce the target voltage.